Methodological Evaluation and Time-Series Forecasting of Community Health Centre Systems in Nigeria

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Abstract

Community health centers (CHCs) in Nigeria face challenges in their operational effectiveness and sustainability. A meta-analysis was conducted on existing studies evaluating CHCs, employing statistical models to identify patterns and trends. A dynamic linear model (DLM) with robust standard errors was used to project future adoption rates based on current data. CHC systems showed a moderate initial growth rate followed by stabilization, with an estimated average annual increase of 5% in the next five years. The DLM model provided reliable projections for CHCs' performance under various scenarios, aiding policymakers in resource allocation and planning. Policymakers should prioritise strengthening infrastructure and training programmes to enhance CHC efficiency and sustainability. Community Health Centers, Nigeria, Meta-Analysis, Time-Series Forecasting, Dynamic Linear Model Treatment effect was estimated with $text\{logit\}(\pi) = beta\, 0 + \beta^{\rightarrow} p\, X_i$, and uncertainty reported using confidence-interval based inference.

Keywords: *Geographic, Sub-Saharan, Meta-analysis, Methodology, Evaluation, Sustainability, Community Health Centers*

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